

REMARKS

Reconsideration of the present application as amended is respectfully requested. Claims 1, 11, 20, and 25 have been amended. New claims 35-37 have been added. Support for the amendments to claims 1, 11, 20, and 25, and for new claims 35-37 can be found at least page 6, lines 26-33 of the application as originally filed. Claims 1-2 and 4-37 are currently pending.

Claims 1, 2, 4, 5, 7, 11, 12, 16/11, 16/12, 17-19, 24, 25, 27-29, 31, 32, and 34 stand rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,913,174 to Casarez et al. ("Casarez") in view of U.S. Patent No. 5,828,342 to Hayes et al. ("Hayes").

The Office Action asserts that Figures 1, 4-6, 11-14 and 31 and column 6, lines 43-59 of Casarez show "an external antenna device 1 for a portable telecommunication apparatus comprising an antenna 63, 65 arranged on at least one planar portion of a common support element 35 when the external antenna device is in an operational mode, the common support element comprising a flexible dielectric film 59 contained in a flexible housing 33 (col. 6, lines 43-59)." The Office Action further asserts that Figure 12 of Casarez shows "the feed point in the gap 67 and ground point/portion 65 of the monopole antenna." The Office Action concedes that "only a single antenna element arranged on the common support element appears to be disclosed." The Office Action asserts that "however, the level of ordinary skill in the antenna art is such that antennas may always be pluralized for the purpose of multi-band operation thus widening the bandwidth, and in another instance for providing gain" and that "a skilled artisan would have looked to a multiband antenna arrangement formed on a flexible substrate when multi-banding is a design objective."

Regarding independent claim 1, independent claim 1 has been amended to include the feature of "said common support element comprising a flexible dielectric film provided in a flexible housing." Applicant respectfully submits that Casarez fails to teach or suggest at least this feature of independent claim 1. Column 6, lines 43-59 of Casarez describe a removable planar antenna 1 that has located within a soft flexible cover 33 and attached to an inner surface 55 of a mounting member 35, a flexible antenna assembly 57. Casarez further describes that the flexible antenna assembly 57 is comprised of a flexible substrate 59 laminated to a rigid member

61. Thus, Casarez appears to describe a flexible substrate laminated to a rigid member. Applicant submits that there is no teaching or suggestion by Casarez that the flexible substrate laminated to a rigid member is a flexible dielectric film. A flexible dielectric film in accordance with an embodiment of the present invention is described, for example, on page 6, lines 26-33 of the specification as originally filed. Applicant respectfully submits that Casarez fails to teach or suggest a common support element comprising a flexible dielectric film provided in a flexible housing as found in independent claim 1 as amended.

The Office Action asserts that column 1, lines 8-22 and 57-64 of Hayes teaches "an antenna arrangement in the environment of a portable communication device, radio, etc, and a printed monopole operating in more than one frequency band and configured to permit spacing of radiating elements in a single plane." The Office Action further asserts that column 3, lines 31-39 of Hayes shows "a first antenna 18 mounted on a first side 14 of a substrate 12 and a second antenna 20 on the second side 16 of the substrate 12." Applicant respectfully submits that Hayes also fails to teach or suggest the aforementioned distinguishing feature of independent claim 1 as amended.

Column 3, lines 23-39 of Hayes describes a monopole antenna that includes a printed circuit board including a first monopole radiating element in the form of a conductive trace on a first side of the printed circuit board, and a second monopole radiating element in the form of a conductive trace on a second side of the printed circuit board. Applicant respectfully submits that Hayes fails to teach or suggest a common support element comprising a flexible dielectric film provided in a flexible housing as found in independent claim 1 as amended. Although Hayes describes that the printed circuit board is preferably made of a flexible dielectric material, such as polyamide, polyester, or the like, Hayes contains no teaching or suggestion of a common support element comprising a flexible dielectric film. Applicant respectfully submits that, even if Casarez and Hayes were somehow combined, such a combination would not result in the invention of independent claim 1 as amended, as neither Casarez nor Hayes teaches or suggests a common support element comprising a flexible dielectric film as claimed in amended claim 1. Applicant respectfully submits that independent claim 1 as amended distinguishes over Casarez in view of Hayes and requests that the 35 U.S.C. 103(a) rejection of independent claim 1 be withdrawn.

Independent claim 11 has been amended to include the feature of "said common support element comprising a flexible dielectric film provided in a flexible housing.." For similar reasons as those discussed with respect to independent claim 1, Applicant respectfully submits that independent claim 11 as amended distinguishes over Casarez in view of Hayes and requests that the 35 U.S.C. 103(a) rejection of independent claim 11 be withdrawn.

Independent claim 20 has been amended to include the feature of "wherein the common support element has formed therein a recess located between the first feeding point and the second feeding point." Support for the amendment to independent claim 20 can be found at at least page 9, line 2 and Fig. 3 of the application as originally filed. As previously discussed, Casarez describes a flexible antenna assembly 57 comprised of a flexible substrate 59 laminated to a rigid member 61, and Hayes describes a monopole antenna that includes a printed circuit board including a first monopole radiating element in the form of a conductive trace on a first side of the printed circuit board, and a second monopole radiating element in the form of a conductive trace on a second side of the printed circuit board. Applicant respectfully submits that neither Casarez nor Hayes, either alone or in combination, teaches or suggests a common support element having a recess formed therein and located between feeding points. Applicant respectfully submits that independent claim 20 distinguishes over Casarez in view of Hayes and requests that the 35 U.S.C. 103(a) rejection of independent claim 20 be withdrawn.

Independent claim 25 has been amended to include the feature of " said common support element comprising a flexible dielectric film provided in a flexible housing." For similar reasons as those discussed with respect to independent claim 1, Applicant respectfully submits that independent claim 25 as amended distinguishes over Casarez in view of Hayes and requests that the 35 U.S.C. 103(a) rejection of independent claim 25 be withdrawn.

Claims 2, 4, 5, 7, 12, 16, 17-19, 24, 27-29, 31, 32, and 34 are dependent upon and include the features of their respective independent claims 1, 11, 20, and 25. For at least the reasons as discussed with respect to independent claims 1, 11, 20, and 25, Applicant respectfully submits that claims 2, 4, 5, 7, 12, 16, 17-19, 24, 27-29, 31, 32, and 34 distinguish over Casarez in view of Hayes and requests that the 35 U.S.C. 103(a) rejections of claims 2, 4, 5, 7, 12, 16, 17-19, 24, 27-29, 31, 32, and 34 be withdrawn.

Claims 6, 8-10, 30, and 33 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Casarez in view of Hayes as applied to claims 1, 4, 5, 6, and 25, and further in view of U.S. Patent No. 5,926,139 to Korisch ("Korisch"). Claims 6, 7-10, 30, and 33 are dependent upon and include the features of their respective independent claims 1 and 25. As discussed with respect to independent claims 1 and 25, Casarez in view of Hayes fails to teach or suggest at least the features of independent claims 1 and 25 of "said common support element comprising a flexible dielectric film provided in a flexible housing."

Korisch describes a single planar antenna for use in two frequency bands which includes two radiating portions each formed as a planar inverted F-antenna. However, Applicant respectfully submits that Korisch also fails to teach or suggest the aforementioned distinguishing feature. Applicant respectfully submits that claims 6, 8-10, 30, and 33 distinguish over Casarez in view of Hayes and further in view of Korisch and requests that the 35 U.S.C. 103(a) rejections of claims 6, 8-10, 30, and 33 be withdrawn.

Claims 13, 15, 16/15, 20, 22, and 23 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Casarez in view of Hayes as applied to claims 11 and 12, and further in view of U.S. Patent No. 6,140,966 to Pankinaho. ("Pankinaho"). Claims 13, 15, and 16 are dependent upon and include the features of independent claim 11. As discussed with respect to independent claim 11, Casarez in view of Hayes fails to teach or suggest at least the feature of independent claim 11 of "said common support element comprising a flexible dielectric film provided in a flexible housing."

Pankinaho describes an antenna structure having a radiating element that comprises at least two connecting points. However, Applicant respectfully submits that Pankinaho also fails to teach or suggest the aforementioned distinguishing feature. Applicant respectfully submits that claims 13, 15, and 16 distinguish over Casarez in view of Hayes and further in view of Pankinaho and requests that the 35 U.S.C. 103(a) rejections of claims 13, 15, and 16 be withdrawn.

Regarding independent claim 20, as previously discussed, Casarez in view of Hayes fails to teach or suggest at least the feature of independent claim 20 of "wherein the common support element has formed therein a recess located between the first feeding point and the

second feeding point." Applicant respectfully submits that Pankinaho also fails to teach or suggest this feature. Claims 22 and 23 are dependent upon and include the features of independent claim 20. Applicant respectfully submits that claims 20, 22, and 23 distinguish over Casarez in view of Hayes and further in view of Pankinaho and requests that the 35 U.S.C. 103(a) rejections of claims 20, 22, and 23 be withdrawn.

Claims 14, 16/14, and 21 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Casarez in view of Hayes and Pankinaho as applied to claims 11-13 and 20, and further in view of U.S. Patent No. 6,039,580 to Sciarretta et al. ("Sciarretta"). Claim 14 and 16 are dependent upon and include the features of independent claim 11. As previously discussed with respect to independent claim 11, Casarez in view of Hayes and Pankinaho fails to teach or suggest the feature of independent claim 11 of "said common support element comprising a flexible dielectric film provided in a flexible housing."

Sciarretta describes an RF connector having a compliant contact. However, Applicant respectfully submits that Sciarretta also fails to teach or suggest the aforementioned distinguishing feature. Applicant respectfully submits that claims 14 and 16 distinguish over Casarez in view of Hayes and Pankinaho and further in view of Sciarretta and requests that the 35 U.S.C. 103(a) rejection of claims 14 and 16 be withdrawn.

Claim 21 is dependent upon and includes the features of independent claim 20. As previously discussed with respect to independent claim 20, Casarez in view of Hayes and Pankinaho fails to teach or suggest the feature of independent claim 20 of "wherein the common support element has formed therein a recess located between the first feeding point and the second feeding point." Applicant respectfully submits that Sciarretta also fails to teach or suggest this feature. Applicant respectfully submits that claim 21 distinguishes over Casarez in view of Hayes and Pankinaho and further in view of Sciarretta and requests that the 35 U.S.C. 103(a) rejection of claim 21 be withdrawn.

Claims 26 stands rejected under 35 U.S.C. 103(a) as being unpatentable over Casarez in view of Hayes as applied to claim 25, and further in view of U.S. Patent No. 5,552,798 to Dietrich et al. ("Dietrich"). Claim 26 is dependent upon and includes the features of independent claim 25. As previously discussed with respect to independent claim 25, Casarez in view of

Hayes fails to teach or suggest at least the feature of independent claim 25 of "said common support element comprising a flexible dielectric film provided in a flexible housing."

Dietrich describes an antenna including a first sub-structure having a major plane that is oriented at a first angle, and a plurality of second sub-structures, individual ones of which have a major plane that is disposed at a second angle to the major plane of the first sub-structure. However, Applicant respectfully submits that Dietrich also fails to teach or suggest the aforementioned distinguishing feature of independent claim 25. Applicant respectfully submits that claim 26 distinguishes over Casarez in view of Hayes and further in view of Dietrich and requests that the 35 U.S.C. 103(a) rejection of claim 26 be withdrawn.

New claims 35, 36, and 37 are dependent upon and include the features of independent claims 1, 11, and 25, respectively. Applicant respectfully submits that new claims 35, 36, and 37 also distinguish over the art of record.

In view of the above amendment, Applicant believes the pending application is in condition for allowance.

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Respectfully submitted,

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